

Technical Data Sheet

EN

PUREX HB-RN

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Product description

The product is a two-component raw material hybrid system for the production of high quality waterproof coatings e.g. polyurethane surfaces of spray foam, concrete, metal and wood. Our product is a hybrid polyurea / polyurethane which allows you to perform fast seamless curable coatings applied using the unit in areas of required substrate waterproof security and good mechanical properties of the finished waterproofing. The product is a cheaper alternative to polyurea coatings.

Coatings are used as protecting coatings. Spraying the product allows permanent protection of steel and concrete structures exposed to the chemical environment and water. These coatings are used for e.g.:

- automotive industry: surfaces prone to corrosion and mechanical damage, and loading spaces in busses
- concrete protection: moisture control, physical resistance
- surfaces exposed to high temperatures up to 120°C and occasionally 150°C

Coating changes color or darkens under UV which may influence the coating's mechanical properties. For lasting color and mechanical parameters preservation it is recommended to secure it by additional coating resistant to UV radiation.

The product marketed in accordance with Regulation (EU) No 305/2011, with the assessment of the performance made in accordance with the European harmonized standard PN-EN 1504-2:2006

The product has CE marking and Declaration of Performance has been issued for it.

Declaration of Performance no.

2/P/2018

Two components:	Component A	Component B
Component name	PUREX HB-RN A	PUREX HB-RN B
State of aggregation	liquid	liquid
Colour	grey	straw-coloured
Viscosity at 25°C [mPas]	550 ± 110	310 ± 60
Density at 25°C [g/cm³]	1,03 ± 0,02	1,12 ± 0,02

Application method recommended

Before using component A needs to be mixed until a solid colour without discoloration and trails is achieved. If the pigment subsides and A component is not mixed properly the components ratio might be impaired which can lead to differences in colour isolation, blisters occurrence, foaming and can impoverish the coating's properties.

Surface preparation:

Before spraying the surface should be cleaned in order to achieve a clean and smooth coating. The substrate should also be free of any impurities such as: oil, dust, grease, loose rust and other undesirable elements from which influenced by the deterioration of adhesion of the coating to the substrate. In order to achieve an even surface the substrate must be primed and aligned. For this purpose, you can use one or two-component primer (primer) which closes pores and produces a surface layer containing no defects (concrete surface). For concrete surfaces is recommended to use a two-component polyurethane primer PRIMER C.

The thickness of the sprayed coating:

The recommended thickness of the applied coating is min. 2,0 mm and it is sufficient to provide good waterproofing properties and produce a surface with a good mechanical properties. In order to achieve the desired thickness of the coating layer recommended method is applied with a cross.

Breaks in applying the coating layers:

Application of coating on vertical and horizontal surfaces has to be performed continuously. While applying PUR PRIMER C primer and after the prime coating has dried, a water-permeable coating needs to be applied within 8 – 24 hours. If the product is then applied predominantly on the old surface polyurea in an interrupted matter the time interval can not be longer than two hours. With a longer period of time PUR PRIMER C covering has to be applied to the old surface width of at least 30 cm and spray a new layer overlapping.

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Dew point temperature:

During the application of the insulation coating pay special attention to the weather condition and particularly in relation to the dew point temperature - the temperature of condensation/water condensation. The substrate temperature during the application must be at least 3°C higher than the dew point temperature. Dew point temperature can be determined using a measuring instrument or from the table as per the following scheme:

Air temperature = 21°C

Relative humidity of air = 75%

Dew point temperature from the table = 16,4°C

The hereinabove scheme should not be applied if the shell surface temperature is less than 19,4°C (16,4°C + 3°C = 19,4°C)

The dependency table of the dew point temperature and the relative humidity of the air located at the end of this technical data sheet.

Spraying coating on PUR foam.

In case of applying the product coating on polyurethane foam by spraying e.g. PUREX NG 0440 we must wait at least 24 hours to cure the foam and stabilize the exchange of gases from the interior of the spray and the air.

Caution:

The product is intended for qualified staff/ experts use. Do not apply on wet surfaces. Prior to application please acquire all any information about the product. Other uses not mentioned in this data sheet are possible only after prior agreement and technology department confirmation. Do not expose isocyanates to moisture. Never store supplies of isocyanates in larger amount.

Never leave A and B components in the material-filled machine for more than 2 to 4 weeks. If the machine has been not used for longer period of time it is advised to clean the equipment thoroughly and fill the machine with solvent.

Ambient temperature during application [°C]	10 - 40
The surface coated temperature recommended [°C]	5 - 35
Components temperature recommended [°C]	50 - 70
Recommended components temperature in barrel during application [°C]	30 - 40
Pressure during application [bar]	120 - 180
Optimum humidity	≤ 65%
Hoses temperature [°C]	50 - 70

Technological properties*

Component A:B ratio - by weight	100 : 109
Component A:B ratio - by volume	100 : 100
Raw materials temperature at the beginning of the reaction [°C]	20
Gel time [s]	> 6
Tack-free time [s]	11 - 15

Physical and mechanical product properties*

Applied coating's density [kg/m³]	≈ 1050
Tensile strength acc. to EN ISO 527 [MPa]	≥ 17
Pull-off properties to concrete surfaces acc. to EN 1542	A – cohesive damage
Tear resistance acc. to ISO 34-1 (B method) [N/mm]	≥ 40
Elongation at break acc. to EN ISO 527	≥ 350
Hardness acc. to EN 868 [°ShD]	≥ 35

* the tests have been performed after 24 hours for 2,1 mm thick coating applied in three layers by cross method. While spraying the layer the machine temperature for both A and B component has been set as 67°C, hoses temperature as 67°C and working pressure as 130 - 140 bars. The spraying has been performed by use of Izoler EVO II machine with Fusion AP pistol and AR2020 nozzle.

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Transport and storage

Store in dry, well ventilated room, in tightly closed containers. Protect against moisture access and direct exposure to sunrays. Store away from heat sources, in the container originally packaged in a vertical position.

Component B needs to be protected against moisture and stored in more than 10°C before solidisation occurs. In case solid particles has formed in B component it should be heated for 24 h in 40 - 50°C.

The products should be transported in tightly closed containers.

Permissible temperature during transport [°C]	10 - 30
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Recommended storage temperature [°C]	10 - 30
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Storage life for component A from manufacture date, if stored in recommended conditions and in original containers:	6 months
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Storage life for component B from manufacture date, if stored in recommended conditions and in original containers:	6 months
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Application safety

While performing the insulation protective personal equipment has to be used: clothing, gloves, protective goggles and masks.

While spraying two-component products with a high-pressure machine all participating employees are obliged to wear respiratory masks with double filter.

*Notes

Data presented in this information have been obtained during the system foaming in model conditions. The results obtained when foaming in other conditions can be slightly different from published.

The system application instruction is available if requested. Polychem Systems company offers its assistance at the system implementation and application in client's manufacture.

Every time the user is obliged to check the product and auxiliary agents usefulness for his intentional use.

The user is obligated to have a valid technical data sheet and safety data sheet of the product, which is provided by the manufacturer during the sale and every time on the customer's request.

Prior to processing the user must carefully read aforementioned documentation and follow the rules of procedure for product use.

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Annex

DEW POINT TEMPERATURE AT RELATIVE AIR MOISTURE

Air temperatu re	RELATIVE AIR HUMIDITY											Air temperature
	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	
2°C	-7,7	-6,6	-5,4	-4,4	-3,2	-2,5	-1,8	-1	-0,3	0,5	1,2	2°C
4°C	-6,1	-4,9	-3,7	-2,6	-1,8	0,9	-0,1	0,8	1,6	2,4	3,2	4°C
6°C	-4,5	-3,1	-2,1	-1,1	-0,1	0,8	1,9	2,7	3,6	4,5	5,4	6°C
8°C	-2,7	-1,6	-0,4	0,7	1,8	2,8	3,8	4,8	5,7	6,5	7,3	8°C
10°C	-1,3	0	1,3	2,5	3,7	4,8	5,8	6,8	7,7	8,5	9,3	10°C
12°C	0,4	1,8	3,2	4,5	5,6	6,7	7,8	8,7	9,6	10,5	11,3	12°C
14°C	2,2	3,8	5,1	6,4	7,6	8,7	9,7	10,7	11,6	12,6	13,4	14°C
15°C	3,1	4,7	6,1	7,4	8,5	9,6	10,7	11,7	12,6	13,5	14,4	15°C
16°C	4,1	5,6	7	8,3	9,5	10,6	11,7	12,7	13,6	14,6	15,5	16°C
17°C	5	6,5	7,9	9,2	10,4	11,5	12,5	13,6	14,5	15,6	16,2	17°C
18°C	5,9	7,4	8,8	10,1	11,3	12,4	13,5	14,6	15,4	16,3	17,3	18°C
19°C	6,8	8,3	9,8	11,1	12,3	13,4	14,5	15,5	16,4	17,4	18,2	19°C
20°C	7,7	9,3	10,7	12	13,2	14,4	15,5	16,5	17,4	18,4	19,2	20°C
21°C	8,6	10,2	11,6	12,9	14,2	15,4	16,4	17,4	18,4	19,3	20,2	21°C
22°C	9,5	11,2	12,5	13,9	15,2	16,3	17,4	18,4	19,4	20,3	21,2	22°C
23°C	10,4	12	13,5	14,9	16	17,3	18,4	19,4	20,4	21,3	22,2	23°C
24°C	11,3	12,9	14,4	15,7	17,1	18,2	19,2	20,3	21,4	22,3	23,2	24°C
25°C	12,2	13,8	15,4	16,7	18	19,1	20,2	21,6	22,8	23,3	24,2	25°C
26°C	13,2	14,8	16,3	17,7	18,9	20,1	21,3	22,3	23,3	24,3	25,2	26°C
27°C	14,1	15,7	17,2	18,6	19,8	21,1	22,2	23,3	24,3	25,2	26,1	27°C
28°C	15	16,6	18,1	19,4	20,9	22,1	23,2	24,3	25,3	26,2	27,2	28°C
29°C	15,9	17,6	19	20,5	21,8	23	24,2	25,2	26,2	27,3	28,2	29°C
30°C	16,8	18,4	20	21,4	23,7	23,9	25,1	26,1	27,2	28,2	29,1	30°C
32°C	18,6	20,3	21,9	23,3	24,7	25,8	27,1	28,2	29,2	30,2	31,2	32°C
34°C	20,4	22,2	23,8	25,2	26,5	27,85	28,9	30,1	31,2	32,1	33,1	34°C
36°C	22,2	24,1	25,5	27	28,4	29,7	30,9	32	33	34,2	35,1	36°C
38°C	24	25,7	27,4	28,9	30,3	31,6	32,8	34	35	36,1	37	38°C
40°C	25,8	27,7	29,2	30,8	32,2	33,5	34,7	35,9	37	38,1	39,1	40°C
45°C	30,3	32,2	33,9	35,4	36,9	38,2	39,5	40,7	41,9	43	44	45°C
50°C	34,8	36,6	34,5	40,1	41,6	43	44,3	45,6	46,8	47,9	49	50°C

From the table you can see at which surface temperature condensation occurs.